AMENDMENTS TO THE CLAIMS

Please cancel claims 18 and 26, amend claims 1-4, 6, 8-11, 14-15 and 19, and add new claims 27 and 28. Claims 20-24 were withdrawn in a previous paper. No new matter is believed to be introduced by the aforementioned amendments and new claims. The following listing of claims will replace all prior versions and listings of claims in the application.

1. **(Currently Amended)** An opto-electronic device having a first cladding layer separated from a second cladding layer by an active layer, said device comprising:

a ridge waveguide formed from at least a portion of the top cladding layer, said ridge waveguide having a ridge top surface ~~deposited~~ disposed from the active layer by a first distance; [[and]]

~~at least one~~ a semiconductor mesa fashioned from a protective layer separate from the top cladding layer, said ~~at least one~~ semiconductor mesa having a mesa top surface ~~deposited~~ disposed from the active layer by a second distance that is greater than said first distance ~~so that said at least one semiconductor mesa shields said ridge waveguide from mechanical damage~~; and

a metal contact layer extending over at least a portion of said ridge waveguide and terminating short of the semiconductor mesa.

2. **(Currently Amended)** The device as recited in claim 1, wherein said ridge waveguide is ~~displaced~~ disposed between a first channel and a second channel.

3. **(Currently amended)** The device as recited in claim 1, ~~further comprising a~~ wherein said metal contact layer ~~deposited over at least a portion of said ridge waveguide~~ extends into a boundary region that is located adjacent said semiconductor mesa.

4. **(Currently Amended)** The device as recited in claim [[3]] 1, wherein said ridge waveguide in combination with said metal contact layer has a distance from the active layer less than said second distance.

5. **(Original)** The device as recited in claim 1, wherein said semiconductor mesa comprises InP.

6. **(Currently Amended)** The device as recited in claim 1, further comprising an etch stop layer interposed between said protective layer and said top cladding layer.

7. **(Original)** The device as recited in claim 1, wherein the opto-electronic device is a device selected from the group consisting of a Fabry-Perot laser, a DFB laser, an optical modulator, and a semiconductor optical amplifier.

8. **(Currently Amended)** A semiconductor laser ~~grown on a substrate~~, the laser comprising:

a semiconductor laser wafer having an active layer, at least two optical cladding layers, and a ridge waveguide, said ridge waveguide having a ridge top surface ~~deposited~~ disposed from a first surface of said semiconductor laser wafer by a first distance;

a plurality of semiconductor mesas formed on said semiconductor laser wafer, each of said plurality of semiconductor mesas being separate from said at least two optical cladding layers and having a mesa top surface ~~disposited~~ disposed from said first surface by a second distance greater than said first distance ~~so that said plurality of semiconductor mesas shield said ridge waveguide from mechanical damage~~;

an insulating film disposed on a portion of said ridge waveguide and on said semiconductor mesas; and

a metal contact layer that covers at least a portion of said ridge waveguide, said metal contact layer terminating short of said semiconductor mesas such that respective portions of said semiconductor mesas are uncovered by said metal contact layer.

9. **(Currently amended)** The laser as recited in claim 8, wherein ~~at least a portion of said ridge waveguide is coated with a~~ said metal contact layer extends from a channel located adjacent to said ridge waveguide into a boundary layer located adjacent to one of said semiconductor mesas.

10. **(Currently Amended)** The laser as recited in claim [[9]] 8, wherein said ridge waveguide in combination with said metal contact has a third distance from said first surface less than said second distance.

11. **(Currently Amended)** The laser as recited in claim [[9]] 8, wherein said metal contact has a thickness of less than about one micron.

12. **(Original)** The laser as recited in claim 8, wherein said second distance is at least 0.5 micron greater than said first distance.

13. **(Original)** The laser as recited in claim 8, wherein at least one of said plurality of semiconductor protective layer has a thickness of between about 1.5 microns and 3.0 microns.

14. **(Currently Amended)** A laser die having an active layer disposed between a first cladding layer and a second cladding layer, the laser die comprising:

a ~~highly~~ doped semiconductor contact layer ~~deposited~~ disposed on the first cladding layer;

a ridge waveguide **[[**contacting**]]** that includes a portion of said semiconductor contact layer ~~and a metal contact layer formed on said contact layer~~, said ridge waveguide having a ridge top surface ~~deposited~~ disposed from a first surface of the laser die by a first height;

a metal contact layer extending over said ridge waveguide; and

~~at least one~~ a semiconductor mesa formed on said semiconductor contact layer, said ~~at least one~~ semiconductor mesa extending a distance above a top surface of said metal contact layer to form an elevated surface ~~shielding said ridge from mechanical damage~~, and said semiconductor mesa arranged such that said metal contact layer terminates short of said semiconductor mesa.

15. **(Currently Amended)** A laser die as recited in claim 14, wherein said at least one semiconductor mesa [[is]] comprises **InP**.

16. **(Original)** A laser die as recited in claim 14, wherein the first cladding layer and the second cladding layer comprises materials selected from the group consisting of III-V semiconductor material.

17. **(Original)** A laser die as recited in claim 14, wherein said elevated surface is elevated from said metal contact layer disposed on said ridge waveguide by at least about 0.5 micron.

18. **(Canceled)**

19. **(Currently Amended)** A laser die as recited in claim 14, wherein the die has a peripheral edge and said semiconductor contact layer terminates proximal to said peripheral edge of the laser die.

20. **(Withdrawn)** A method of protecting a ridge waveguide of an opto-electronic device, the method comprising:

a step for forming a wafer having a semiconductor layer sequence that includes an active layer, a top clad layer, a doped layer, and a semiconductor protection layer grown on said doped layer;

a step for forming a first semiconductor mesa and a second semiconductor mesa in said wafer; and

a step for forming a ridge waveguide between said first semiconductor mesa and said second semiconductor mesa, wherein said first semiconductor mesa and said second semiconductor mesa are positioned and have a surface height sufficiently greater than a surface height of said ridge waveguide to form an elevated surface shielding said ridge waveguide from mechanical damage

21. **(Withdrawn)** The method as recited in claim 20, wherein said step for forming said first semiconductor mesa and said second semiconductor mesa further comprises:

a step for masking said wafer to expose regions in which ridge lasers are to be formed; and

a step for etching said protection layer in unmasked regions to form said first semiconductor mesa and said second semiconductor mesa above an etched region.

22. **(Withdrawn)** A method as recited in claim 20, wherein forming said ridge waveguide further comprises a step for etching said top clad layer between said first semiconductor mesa and said second semiconductor mesa.

23. **(Withdrawn)** A method as recited in claim 22, wherein said step for etching comprises a step for etching said top clad layer to within about 1 micron of said active layer.

24 **(Withdrawn)** A method as recited in claim 20, further comprising a step for applying a metal contact layer to at least a portion of said ridge waveguide.

25. **(Previously Presented)** The device as recited in claim 1, further comprising an insulating layer extending over at least one of the mesas, and further extending over a portion of the ridge waveguide.

26. **(Canceled)**

27. **(New)** The semiconductor laser as recited in claim 8, wherein part of the insulating film is located beneath the metal contact layer.

28. **(New)** The laser die as recited in claim 14, further comprising an insulating film extending over said semiconductor mesa, and further extending over a portion of the ridge waveguide.